SECTION 5: Transportation

Principles

- Focus on access, not mobility. A focus on access—being able to get to and use resources—means locating resources so they are convenient to people. A focus on mobility—being able to get from one place to another—promotes road building.
- As access by other means improves, motorists should pay more of the true costs—direct and indirect—of driving. Currently, motor vehicle travel is heavily subsidized.
- Travel by single-occupancy vehicle should be a last resort.
- Motorists should use an alternative-fuel vehicle and/or one that is fuel-efficient.

Role of Transportation in Cambridge

According to the city's 1998 GHG emissions inventory, transportation is responsible for about 12% of the GHG emissions in Cambridge. This is a smaller proportion than in communities in other parts of the country. The national average is about a third.

Several factors contribute to this smaller role:

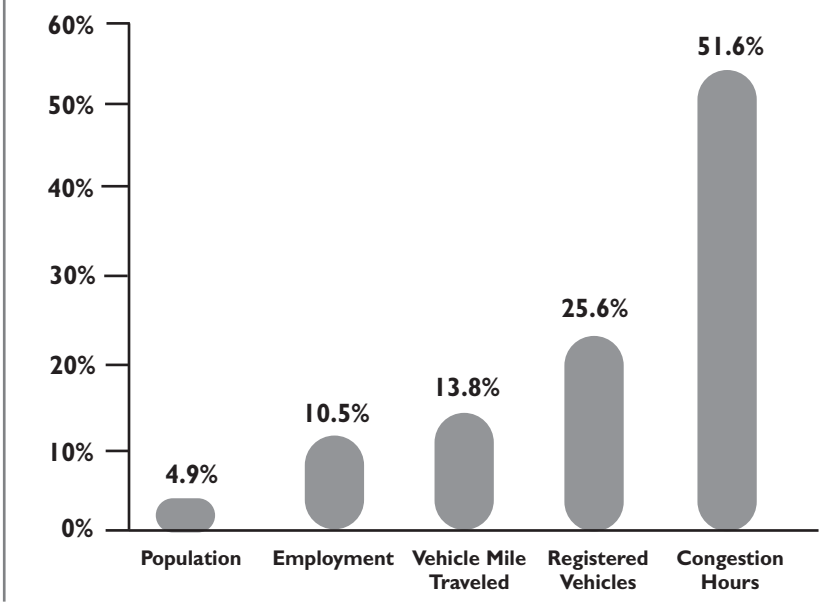
- Cambridge has a large institutional/commercial component with high energy use.
- Trips tend to be relatively short because the city is geographically small and dense, mostly with mixed-use development, and destinations tend to be close to each other. Most people, for example, do not need to travel more than a mile to buy groceries or go to a movie.
- An unusually large percentage of people walk or bike in Cambridge, because there is a high percentage of students, the streets are bicycle and pedestrian-friendly, and the public transportation system provides an easy way to get to many destinations.

Somewhat offsetting these factors is the volume of truck and commuter traffic passing through the city. Because the Boston area consists of many geographically small communities, a large portion of trips in one community originates in another city or town. As Cambridge is part of the region's inner core, it probably has more pass-through traffic than most other communities in the region. Because people in much of Greater Boston do not have easy access to destinations and lack adequate public transportation, many people do not currently have convenient alternatives to driving.

Trends

- The City projects about 12 million square feet of new development in Cambridge over the next 20 years. Even with the parking and transportation demand management (PTDM) program, this development will mean an increase in motor vehicle traffic. To reach a 10% reduction in the face of this projected growth will require major shifts in travel choices.
- Car registration in Cambridge has steadily increased over the past few years. In January 1991, 43,684 cars were registered; in January 2001 the total was 55,679.
- Regional data shows that while the population of Massachusetts increased by about 5% between 1990 and 2000, the annual vehicle miles driven increased nearly 20%.
- As a nation we are driving vehicles that are less fuel efficient. The EPA reports that from 1988 to 2000 new light vehicle fuel economy has declined 1.9 miles per gallon. The average fuel economy for a 2000 model vehicle is 24.0 mpg, as low as it has been any year since 1980. Ownership of large vehicles (SUVs, vans, minivans, and pickup trucks) has risen steadily for the past 20 years; they now make up 46% of the U.S. light vehicle market.[1]

The Metro Boston Area Shows Growth in the Dependence on Private Cars between 1990-1999



Mass. Executive Office of Environmental Affairs, Shape of Our Environment.

1. U.S. Environmental Protection Agency, *Light-Duty Automotive Technology and Fuel Economy Trends 1975 through 2000.*

CAFE Standards: Corporate Average Fuel Economy

The U.S Energy Policy and Conservation Act of 1975 required passenger car and light truck manufacturers to meet CAFE standards. The standards are applied on a fleet-wide basis for each manufacturer. The entire line of passenger cars must average at least 27.5 mpg for the manufacturer to comply with the standard. A manufacturer is liable for a civil penalty of $5.00 for each 0.5 mpg its fleet falls below the standard, multiplied by the number of vehicles it produces. The 1994 and 1995 CAFE standards for light trucks are 20.5 mpg and 20.6 mpg. If manufacturers exceed CAFE standards they can earn credits that can be used to offset fuel economy shortages in the three previous or three subsequent model years.

Source: http://www.ita.doc.gov

Strategic Approaches to Reduce GHG Emissions from Transportation

The desire to reduce traffic congestion has been a longstanding community priority. The City's 1993 growth policy document, Toward a Sustainable Future, offers the following transportation vision:

Significantly reduced automobile traffic. Walking, carpooling, public transit, bicycling, and jitney trips are the norm. Employers and families compete annually to reduce single occupant car trips by the greatest percentage. All corners of the city (and adjoining cities) are stitched together by bicycle lanes and paths.

There are two strategic approaches to reducing GHG emissions related to transportation: reducing the vehicle miles traveled (VMT) and reducing the GHG emissions per mile of travel. Promoting use of transit is an example of the first approach; replacing conventional vehicles with electric-powered vehicles is an example of the second approach. In weighing approaches, it is important to remember that reducing VMT has many benefits. In the United States, motor vehicles caused an estimated 41,800 deaths and 3,236,000 injuries in 2000 from collisions and 2,000 deaths from air pollution.[2] They affect the livability of a community and the ability of children to play outside independently or travel on their own. The quantity of paving cars require makes cities hotter, cuts down on the availability of space for planting trees, increases stormwater runoff, and is aesthetically unpleasing. Motor vehicles are noisy and pollute soil and water, as well as the air. In addition, they make sprawl possible, which has many deleterious social and environmental effects. Motor vehicle traffic causes many direct problems for communities and profound indirect effects, including increased GHG emissions.

The City of Cambridge has a comprehensive program to reduce VMT. Affecting the GHG emissions of vehicles on the road has been less of a focus. However, national trends toward less efficient vehicles dwarf potential environmental gains from programs like the City vehicle trip reduction program.

2. U.S. Department of Transportation and the American Lung Association. Over 10% of those killed in collisions—4,727 people—were pedestrians.

Kinds of measures

To date, most of the projects the City has undertaken have featured positive incentives for using means other than driving alone. There is considerable evidence that negative incentives (e.g., reducing the availability of parking) are more effective than positive incentives (e.g., improving sidewalks) on reducing driving. In general, there is strong public support for taking action to reduce traffic. On the other hand, measures that make it more difficult for residents to drive have often failed to be implemented because of community opposition.

Success in achieving a mode shift is likely to come when there is a cultural shift-when using modes other than single-occupancy vehicles is seen as desirable, rather than the fate of those who don't have access to a car. This is why emphasizing the benefits of other modes—e.g., the health benefits of walking, the convenience of transit—is important. It is also why measures that involve high-profile people may be especially important, e.g., removing special parking privileges for executives.

Why Bicycle lanes?

Many Cambridge streets now have bicycle lanes. These lanes can provide several benefits:

- *Help organize traffic;*
- *Offer more space for cyclists by keeping motorists away from the far right edge of the road;*
- *Remind motorists to watch for cyclists;*
- *Encourage cyclists to ride on the street (where, in general, they are safer) rather than on the sidewalk;*
- *Convey a message that cyclists are welcome on Cambridge roads.*

Tools and Resources

Tools to Reduce VMT

Vehicle Trip Reduction Ordinance

In 1992 the Cambridge City Council passed the Vehicle Trip Reduction Ordinance, which mandates bicycle and pedestrian programs and other measures to reduce motor vehicle travel. While it is impossible to calculate emissions benefits from these measures, they may eventually add up to a shift in the city's culture.

Cambridge bicycle and pedestrian committees

These committees, appointed by the City Manager, give input into City bicycle and pedestrian projects and policies, review new development, and promote cycling and walking.

Parking and Transportation Demand Management Ordinance

In 1998 the City Council passed the Parking and Transportation Demand Management (PTDM) Ordinance, which mandates that whoever wants to build non-residential parking facilities (with some exceptions for small projects), or expand existing facilities, must develop a PTDM plan. The plan is a commitment to take specific actions to minimize the number of trips made by car to the site. The City must approve the plan before the project can receive necessary permits to proceed. The ordinance also mandates monitoring to ensure that the PTDM plans are being implemented and goals are being met. The City's PTDM Officer administers and enforces the ordinance.

Zoning

Zoning is an important tool for transportation management. It determines what kinds of land uses and densities are allowed. Zoning that allows for higher density around transit, that allows for housing, commercial, and institutional uses in the same area, and that places limits or other requirements on parking helps reduce automobile travel. In February 2001, the city council passed comprehensive new zoning measures, including some designed to reduce the traffic impacts of new development. These include reducing parking at new developments, counting parking garage floors when determining a building's height, and requiring traffic impact mitigations for new development. It is estimated that these measures will cut in half the otherwise anticipated number of trips from new development by 2020.

Public transportation

Much of Cambridge is well served by public transportation. While the City does not have direct control over the transit system, staff work with the MBTA to improve subway and bus services. The City is a member of the Urban Ring Compact, a consortium of communities working to create a new transit line that would run from Columbia Point in Boston through Roxbury, the Longwood medical area, Cambridgeport and East Cambridge, Somerville, Everett, and Chelsea to Logan Airport. The Urban Ring is planned in three phases: Phase one, optimizing bus service in the corridor, is planned for about 2006; phase two, a bus rapid transit system, is planned for about 2011; phase three, with light rail, is envisioned for about 2020.

Shuttles

Along with the City's shuttle service for elderly people and the MBTA's service, The Ride, for people with disabilities, several private employer and institutional shuttles serve portions of the Cambridge community. These include the Longwood Medical Area shuttle; shuttles for Harvard and Lesley College students; the Wave, a bus service between the Galleria Mall and Kendall Square; the Charles River Transportation Management Association E-Z Ride shuttle connecting North Station, Kendall, and University Park; and others.

The Hunt for the Golden Shoes

In 2001 and again in 2002, Cambridge Walks has organized a hunt for golden shoes.

During the month of May, 100 gold-painted shoes, many of them decorated by elementary school art classes, are placed around the city in parks, playgrounds, and on walking paths. Any pedestrian who finds a golden shoe can turn it in for a gift certificate good for a free pair of sneakers donated by New Balance. Shoe winners are also entered into a grand prize drawing for a "walking shopping spree."

cambridge walks

State and federal funding

Much of the funding for roadway construction comes from the state and federal governments. Federal funds are channeled through the state.

The Transportation Equity Act for the 21st Century, known as TEA-21, is the federal authorizing legislation for surface transportation. It is a six-year authorization, signed in June 1998. The funds are allocated and administered through the states. Under TEA-21, funds can be spent on pedestrian and bicycle facilities and on public transportation.

TEA-21 also includes some programs that fund projects to provide clean air benefits. The major programs are:

- The Congestion Mitigation and Air Quality Improvement (CMAQ) program, which funds projects to help meet the requirements of the Clean Air Act, e.g., transit improvements and public fleet conversion to cleaner fuels.
- The Transportation Enhancement Program, which can pay for bicycle, pedestrian, and transit facilities and improvements.
- In Massachusetts, Chapter 90E, Section 2A of the General Laws requires the commissioner of the Massachusetts Highway Department to "make all reasonable provisions for the accommodation of bicycle and pedestrian traffic in the planning, design, and construction, reconstruction or maintenance of any project undertaken by the department."

Tools to Reduce Vehicle Emissions

Clean Cities Program

Under this federal program, municipalities can be reimbursed for the cost difference between a conventional and an alternative fuel vehicle. The program is administered in Massachusetts by the state Division of Energy Resources (DOER). DOER offers $2,000 grants to offset the incremental cost of alternative fuel vehicles. The program also provides assistance for creating the infrastructure needed for alternative fuel vehicles. DOER is working with other agencies and private entities to expand the network of compressed natural gas refueling stations. A station is proposed to be built in Brighton on Western Avenue, which is close to Cambridge.

State Contracts for Vehicle Acquisition

The City can use existing state contracts for products and services to purchase fuel-efficient and alternative fuel vehicles. This allows the City to benefit from the stronger negotiating position of the Commonwealth. Several state contracts are in place for alternative fuel and hybrid vehicles.

The Health Benefits of Walking

Lack of physical activity is thought to be a primary factor in more than 200,000 deaths a year in the United States. Making walking part of a daily routine is feasible for most people, as nearly 25% of all trips people take are less than a mile. Thirty minutes of walking a day has significant health benefits:

- *It helps prevent heart disease.*
- *It builds bone density.*
- *It helps with weight loss.*
- *It can relieve tension and fatigue.*
- *In winter, it can help prevent the depression some people suffer from lack of sunshine.*

Clean Vehicles under State Contracts

Hybrid

- *Toyota Prius/sedan*

Electric

- *Ford Ranger EV/truck*
- *Solectria Force/sedan*

Compressed Natural Gas

- *Ford Crown Victoria*
- *Ford Club Wagon*
- *Ford F250/truck*
- *Honda Civic GX/sedan*
- *Ford E250/cargo van*
- *Ford E350/cargo van*

Federal Tax Incentives

The federal government offers an income tax deduction to individuals and businesses for the incremental cost to purchase or convert qualified clean fuel vehicles. The deduction varies based on vehicle weight and ranges between $2,000 and $50,000. For electric vehicles, a tax credit of 10%, up to $4,000, of the purchase price is available. This tax credit declines by 25% a year until 2004, when it phases out.

ACTIONS TO REDUCE GREENHOUSE GAS EMISSIONS

Note: Actions are classified based on which sectors of the community would be directly involved:

B=Business community
G=City government
R=Residents
I=Institutions

Proposed actions are listed by sector in Appendix III.

Strategy 1: Reduce Commuting by Single-Occupancy Vehicles

Commuting accounts for about 10% of motor vehicle trips in Cambridge. Traffic generated by new commercial development has been a particular concern of residents, and reducing commuter trips has been a major focus for the City.

Actions: 1990-2001

- The PTDM Ordinance and program were developed and carried out.
- The City set up a T pass subsidy program for City employees, purchased bikes that are available for City employees to use to carry out their work, and instituted a program to inform employees of alternatives to the auto mobile for commuting.
- Minimum parking requirements for new commercial development were lowered.
- Working with the City or independently, some employers have carried out a variety of PTDM measures.

EZ Ride Shuttle

In January 2002, the Charles River Transportation Demand Management Association, its member businesses and organizations, and the City started the EZ Ride Shuttle Service between North Station and University Park. The City hopes the shuttle will replace 500 round trips into and out of Cambridge each day.

Proposed Actions

Short-term

- Expand City outreach to other businesses to increase participation in voluntary TDM programs. [G]
- Expand incentives and increase participation in the City TDM program for municipal employees. [G]
- Undertake aggressive TDM measures and monitor the results. [B, I]
- If driving alone to work, discuss with employer ways to make it easier to ride-share, take transit, walk, or bike. [R]

Medium-term

- Monitor results of PTDM program and investigate increasing the requirements. [G]
- Investigate lowering further the minimum parking standards for new development, especially near T stations. [G]

Long-term

- Continue aggressive TDM measures and monitoring. [G, I, B]

Strategy 2: Improve Facilities for Walking and Cycling

For an American city, Cambridge has exceptional pedestrian and bicycle facilities.

For pedestrians, it has sidewalks on both sides of virtually all its streets, and all city roads have speed limits of 30 MPH or lower. Most people live within a comfortable walking distance of a variety of destinations.

Making intersections safe and comfortable for pedestrians and making the pedestrian environment appealing, through urban design, short blocks, vegetation, and other means are vital for encouraging people to walk. Ensuring that sidewalks are kept free of snow and ice is important to make sidewalks accessible to everyone throughout the year. Pedestrian facility standards and conditions are described in detail in the Cambridge Pedestrian Plan.

While most pedestrian improvements are made on an intersection-by-intersection basis, the City also undertakes major roadway projects that improve both pedestrian and bicycle access, often in conjunction with other projects. If a road is being torn up to install new water and sewer lines, for example, the City takes the opportunity to look for ways to put the road back so it works better for pedestrians and cyclists and/or to slow down traffic, if speeding is an issue.

Many people walk in Cambridge as their primary mode of getting around the city; many fewer ride bicycles. Cambridge has excellent potential to increase cycling because the city is flat, has destinations that are close together, and has a large student population. The City's policy is to make all streets bicycle-friendly, rather than designating some as bicycle routes. The City installs bicycle lanes on roads where there is enough space for them. Where there is less space, the City often installs guidelines, which direct motor vehicle traffic toward the center of the street, leaving more room for cyclists.

Off-road bicycle paths are used both for recreation and as transportation facilities. The Minuteman Commuter Bikeway is one of the most heavily used bike paths in the United States. A recent City project extended the bikeway, which runs 11 miles to Bedford, from the Arlington line to the Alewife T Station. From there it connects to Linear Park and Somerville. The City of Somerville is working on plans to extend the path through to the Lechmere area, which would connect with extensions to the Charles River Reservation.

It is impossible to measure the benefits of any single bicycle improvement. Experience elsewhere indicates that a community can increase the number of people who choose to cycle by improving facilities and visibility for cyclists and through community education. According to the League of American Bicyclists, if every resident in a city of 100,000 replaced a car trip with a bicycle trip once a month, CO_2 emissions would drop by 3,764 tons a year.

Free bike and bike-sharing programs have been successful in some cities. Typically they involve either non-profit groups providing a fleet of bicycles that are either available on the street for anyone to use or are available to fee-paying members only.

Police enforcement is also an important safety education tool. Efforts by the police include handing out warning citations and tickets to cyclists for traffic violation

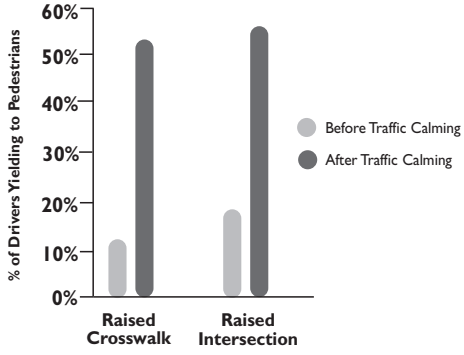
Raised Crosswalks

Raised crosswalk on Columbia Street

Raised crosswalks make it safer to cross the street by bringing the roadway up to the level of the sidewalk at the crosswalk. They reduce vehicle speeds by acting as a speed hump (but are safer than old-style speed bumps that are seen in locations such as parking lots). They also help to make the crosswalk more visible and allow people to walk straight across the street without having to step down to the level of the roadway and then back up on the other side.

How many drivers yield to pedestrians?

Effects of Columbia Street traffic calming project on driver behavior



Actions: 1990-2001

Pedestrian improvements at various sites throughout the city have included:

- Programming traffic signals to give pedestrians a head start on turning vehicles (leading pedestrian intervals).
- Decreasing pedestrian wait times by removing most pedestrian push buttons.
- Repainting many crosswalks to make them more visible.
- Instituting an aggressive education and enforcement program to ensure that sidewalks are kept clear of snow and ice.
- Widening sidewalks and installing curb extensions and raised crosswalks at many intersections to make it easier for people to cross the street.

Bicycle facility improvements have included:

- Installing bicycle lanes or guidelines on many major streets.
- Installing parking for more than 800 bikes, mostly at commercial areas, parks, and schools.
- Making bicycle facility planning a routine part of the City's transportation planning. When changes to intersections, traffic signal operations, or travel lane widths are planned, the needs of cyclists are factored in.

Major roadway projects featuring facility improvements for pedestrians and cyclists include:

- ***Fresh Pond Parkway***—Trees were planted and bicycle paths and sidewalks and pedestrian-actuated traffic signals were installed.
- ***Columbia and Third streets***—Improvements include neckdowns, a raised crosswalk at a park entrance, tree planting, and installation of chicanes to slow down traffic.
- ***Central Square***—A travel lane was eliminated and the recovered space was used to expand the sidewalks and install bicycle lanes. This, along with curb extensions at most crossings, dramatically reduced the distance pedestrians need to walk to cross Massachusetts Avenue. A right-turn slip lane at Magazine Street and Massachusetts Avenue was eliminated and the plaza on the corner was expanded, making the crossing easier and safer for people on foot.

  Smaller projects have been done at many locations, including Quincy, Arsenal, and Sheridan squares.

Proposed Actions

Short-term

- Expand the pedestrian program to further improve intersections and increase year-round sidewalk maintenance, provide public restroom access and benches, and make aesthetic improvements, e.g., trees, flowers, buildings with windows, fences that are low and transparent. [G, B, I, R]
- Install additional bicycle parking and look for new opportunities to install bicycle lanes or guidelines and improve intersections for cyclists. [G]

Medium-term

- Create and improve off-road bicycle and pedestrian paths, e.g., a new path along the Grand Junction railroad right-of-way, improvements along the Charles River, and paths connecting to Belmont and Watertown. [G]
- Consider creating a bicycle commuter station, possibly at Kendall Square. [B]

Long-term

- Continue pedestrian and bicycle programs [G]
- Investigate possible shared-use very low-speed neighborhood streets [G]

Strategy 3: Reduce the Amount of Motor Vehicle Travel through Parking Incentives and Restrictions, Car-Sharing, Promotion, and Education

Studies indicate that parking restrictions are by far the most effective way to reduce driving, but they tend to be unpopular and therefore difficult to implement. Because most residents do not have off-street parking and very little space is available to create more parking, there are built-in constraints on residential parking.

An early successful effort to reduce the amount of parking for new commercial development was the City's work with the developer of the Galleria Mall to reduce parking and institute a shuttle bus that runs from the mall to the Kendall Square Red Line station.

Driving Tips for Tree-Huggers from CarTalk.com

1. Get your car serviced regularly.

Regular servicing uncovers many problems that reduce gas mileage and increase pollution.

2. Check your tire pressure.

Tires that are under-inflated by only four pounds of air can reduce your mileage by as much as 10 percent.

3. Don't top off your gas tank.

Topping off fills the vapor recovery equipment with liquid gas instead of the vapors the gas gives off. When this happens, the equipment ceases to work properly, contributing to the formation of ground level ozone, smog, and acid rain.

4. Don't use more octane than you need.

Most modern engines neither require nor benefit from premium gas. The extra octane may in fact increase the pollution given off by your car.

5. Stop your idling.

Car exhaust does not stink as much as it used to, but it still pollutes. Cars no longer need to warm up unless the temperature is below zero, so just turn on the motor and go.

6. Slow down.

Wind resistance increases dramatically with speed. For every mile over 55, your gas mileage goes down 2%. If you drive 70 MPH you get half the fuel economy you get at 55.

Another possible approach to reducing driving is car sharing, an increasingly popular alternative for people who need a car occasionally but don't use one for most of their transportation. People who opt for car sharing instead of owning a car may make many travel decisions differently; the cost of using a car is based on mileage, rather than largely based on its purchase price. Zipcar, a car-sharing company based in Cambridge, has attracted many members. Initially, the GHG emissions reductions from car sharing will probably be small, as subscribers are likely to be people who do not own cars and who may actually drive more after joining a car-sharing program. Eventually, however, emission reductions may increase as people opt for car sharing instead of replacing their cars.

The City has undertaken a number of promotional and educational efforts to encourage people to walk, cycle, carpool, or take transit. These have tended to focus on the community and environmental benefits of car-free travel. Recent efforts have also featured the health benefits of walking and cycling. It seems clear that convenience and cost are not the only factors that affect people's decisions about what travel mode to use. For example, for some people, riding the bus is a low-status activity, while for others, it's a convenient way to avoid the hassles of parking. For some people, walking—even a relatively short distance—seems like too much effort; for others, it's welcome exercise. In Holland or Denmark, most people cycle, regardless of their age, for transportation as well as recreation; to many Americans, cycling is only a recreational activity for young people. Promotion—making alternatives appear attractive and socially acceptable—is an important component of a GHG reduction program.

The Cambridge Walks coalition was organized in 1999. This coalition includes the Cambridge Health Alliance, the public schools, the community development department, community groups, and others interested in promoting walking for health. It has organized a variety of successful promotional events.

Actions: 1990-2001

- The City produced and distributed educational and promotional information, including various brochures, the map *How to Get Around in Cambridge*, information at the City web site, promotional ads at local movie theaters, a billboard campaign featuring local celebrities, and informational kiosks in four City buildings.
- The City organizes a series of events during Go Green Month (May) and participates in community events.
- Bicycle safety education programs were established in the schools.
- Stanchions have been posted in some crosswalks to remind motorists to yield to pedestrians, and police enforcement has increased, including citing motorists for failing to yield to pedestrians in crosswalks and citing cyclists for failing to obey traffic laws.
- Zipcar, a for-profit organization that provides car-sharing services for fee-paying members, was established. The City provided discounted parking spaces to help launch Zipcar.
- The Cambridge Walks coalition was created to promote walking for health through various activities, including the annual hunt for golden shoes and Walk Your Child to School Day celebrations.

Proposed Actions

Short-term

- Install signs with schedule and route information at bus stops in Cambridge. [G]
- Install shelters or benches at busy bus stops where there is room on the sidewalk. [G]
- Investigate traffic measures to expedite bus travel. [G]
- Continue to develop and distribute promotional material and hold promotional events. [G]
- Continue the work of Cambridge Walks, including Walk Your Child to School Day. [G,B]
- When giving directions to businesses, events, and institutions, include directions by T. [G, B,I]
- Work with community groups to promote walking and biking for health. [G, R]

Fuel Efficiency and Oil Imports

Increasing the fuel efficiency of new cars and light trucks just 5% a year would cut U.S. oil use by 1.5 million barrels a day within a decade, according to the American Council for an Energy-Efficient Economy (ACCEE).

U.S. oil imports more than doubled in the past 15 years and oil imports now exceed domestic oil production. According to some military analysts, over half the U.S. military budget is for defending our international oil interests, especially in the Middle East.

Medium-term

- Investigate measures to expedite bus travel. [G]
- Establish a "walking bus" program in 3 schools. [G,R]
- Publicize proximity to transit as a reason to shop in local stores, distribute free subway tokens to customers where parking vouchers are provided, and offer discounts to cyclists. [B]

Long-term

- Examine the feasibility and logistics of establishing a city-wide bicycle-sharing program. [B]
- Establish car-free celebrations in Cambridge. [B,R]

Strategy 4: Reduce Motor Vehicle Emissions

In the United States, motor vehicle fuel efficiency has decreased because of the proliferation of sport utility vehicles (SUVs) and light trucks. Locally, this can be countered primarily by buying alternative fuel vehicles and by using the most fuel-efficient vehicle possible to complete the task.

The way that vehicles are driven affects emissions. Driving speed, tire pressure, and braking habits all affect mileage. Idling is a significant source of GHG emissions as well as local air pollution.

Installing emission controls on heavy-duty trucks and construction vehicles is an inexpensive measure that removes significant amounts of air pollutants. This was done on vehicles working on the Central Artery project. While this measure does not appreciably affect GHG emissions, it is included here because of its high level of benefits, especially given the quantity of construction in Cambridge.

The federal corporate average fuel economy (CAFE) standards were last raised in 1975 and implemented in 1985. Attempts to raise them again have been unsuccessful to date, largely because the automobile and petroleum industries have claimed that increasing fuel efficiency standards would place an economic burden on society. As the economic burdens to society of not raising the standards become more evident, this argument will probably carry less weight in the future.

If new standards of 50 MPG for cars and 35 MPG for light trucks were adopted, and 50% of the vehicles in Cambridge met improved standards in 2010, the CO_2 savings would be 46%, compared to 50% of the vehicles meeting only the current standards of 28 MPG for cars and 21 MPG for trucks. Changing the CAFE standards is the single most important measure the nation can take to curtail GHG emissions from motor vehicles.

ACEEE Vehicle Safety Standards

A report on auto safety released March 28, 2002 found that the average sport utility vehicle or pickup truck is more dangerous than most cars on the road, when risk to other drivers is considered.

The report also shows that many small cars have a lower fatality rate among their own drivers than SUVs or trucks. SUVs are currently the fastest growing segment of new vehicles, comprising 21% of the market, up from 6% just 13 years ago.

The study finds that mid-size models such as Jetta, Accord, and Camry have driver fatality rates as low or lower than those of any of the major SUV or pickup models. The findings of the report conclude that all popular car models score better than any popular SUV or truck model on deaths to drivers in other vehicles. This goes directly against the myth that SUVs are safer on the road than smaller vehicles.

Actions: 1990-2001

- Cambridge has acquired two electric trucks and one CNG truck.
- DOER has an electric vehicle recharging facility at the Alewife T station (part of a demonstration electric vehicle commuter leasing program).
- Under the Cambridge Parking and Transportation Demand Management Ordinance, electric vehicle recharging facilities must be provided in new, large parking facilities.

Proposed Actions

Short-term

- Adopt a City green fleets policy that incorporates energy efficiency criteria for acquiring municipal vehicles, including sizing of vehicles appropriate to their tasks and giving preferences to alternative fuels and hybrid vehicles where possible and promotion of using the smallest vehicle necessary for jobs (including City bikes). [G]
- Establish a municipal work group to coordinate implementation of alternative fuel vehicle acquisition and infrastructure installation. [G]
- Switch to alternative fuel and minimum-sized vehicles. [R]
- Provide a program on driving and maintenance practices that reduce fuel use and emissions for employees who use City vehicles and for the community. [G]
- Publicize the health and environmental costs of motor vehicle emissions. [G,I]
- Reduce the number of nonresident citywide stickers. [G]

Medium-term

- Undertake an anti-idling campaign. Do education about idling through signs, targeted mailings to schools, parents, bus companies, shipping desti nations; follow up with enforcement. [G,R] Make sure vehicles engaged in business do not idle unnecessarily. [B,I]
- Work with the city's congressional delegation to advocate for higher CAFE standards. [G,R]
- Work with state agencies to develop a system to more closely tie vehicle insurance costs to vehicle miles traveled. [G,R]
- Develop stickers on tire pressure for optimum energy efficiency to install at service station air pumps. [G,B]

Long-term

- Establish infrastructure for AFVs, including a CNG fueling station for City vehicles, free public access refueling stations, partly solar-powered, for electric vehicles; and reserved spaces for zero and super low-emission vehicles in municipal garages and parking lots. [G,B]
- Install emission controls on heavy-duty City trucks and construction vehicles; investigate requiring emissions mechanicals on trucks doing business with the City. [G]
- Investigate possible programs to encourage taxis to switch to CNG. [G,B]
- Link parking sticker fees to engine size and put a cap on the tonnage of vehicles eligible for residential parking permits. Increase fees for second, third cars. [G]
- Establish a parking maximum for residential units. [G]
- Study possible creation of neighborhood-zoned parking. [G]

Strategy 5: Promote Local and Regional Transit Improvements

Actions 1990-2001

- The Urban Ring Compact, a consortium of communities working with the MBTA to create a circumferential transit line, was formed. The City has worked on every aspect of planning for the Urban Ring.
- The City has coordinated with the MBTA on improving and publicizing service and taken a leadership role in regional transportation planning efforts, such as the Regional Transportation Advisory Council.

Proposed Actions 2002-2010

Short and medium-term

- Advocate for additional federal and state transit funding. [G,B,I,R]
- Work with other communities to create new MBTA services, including an Orange Line stop at Assembly Square, Somerville; a Green Line extension from Lechmere to Medford, and the Urban Ring line. [G,B,I,R]
- Advocate for low-emissions buses. [G,B,I,R]
- As the federal transportation funding reauthorization process unfolds, advocate with state and federal elected officials to shift federal funds from highways to transit. [G,B,I,R]

Long-term

- Advocate that federal and state officials begin planning an interstate transportation system that does not include large trucks on roadways other than limited access highways. [G,B,I,R]